

Engagement Opportunities in NASA STEM 2022 (EONS-2022)
NASA Research Announcement (NRA)
MUREP PBI/HBCU Data Science Equity, Access and Priority in Research and Education
(MUREP DEAP)
Number: NNH22ZAO001N-MUREPDEAP

Title: Institute for Multi-agent Perception through Advanced Cyberphysical Technologies (IMPACT)

Institution: Fayetteville State University

City/State: Fayetteville, North Carolina

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FY: 2023

Summary: This proposal requests funds to establish the Institute for Multi-agent Perception through Advanced Cyberphysical Technologies (IMPACT) as a collaboration between three HBCUs. IMPACT will build on existing capacity and collaboration with the Jet Propulsion Lab to engage HBCU students and faculty from the three universities in using Data Science to address scientific questions as one of the key factors to manage NASA Mission research. The institute will undergo a three-year period of training, research design, and execution aligned with two NASA use-cases: the Arctic-Boreal Vulnerability Experiment (ABOVE) which addresses the context of protecting and improving life on Earth and the use-case of space exploration with heterogenous agents in the context of search for life elsewhere. IMPACT will generate novel research results in the emerging area of energy-aware, efficient AI/ML models for perception tasks at the edge which are useful for multi-agent systems that solve challenges in the selected use-cases for earth observation and space exploration. IMPACT will create new ways of training students and provide high quality resources for learning Data Science.